

Work Order ID 139972***139972***

Page 1

Wednesday, December 16, 2015 8:35:55 AM

Item ID: D3049-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Bearpaw

Stop ***NS2***

Start Date: 12/16/2015 Start Qty: 6.00

6

Cust Item ID:

Required Date: 12/18/2015 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan: WMCDate: 12-12-15

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3049

Rev A1

110

0.00

110

Waterjet

Memo

0.05

FLOW CNC Waterjet

CUT BLANK AS PER FILE D3049-1_BLANK

8 EL 15-12-15

120

0.00

120

HAAS 1

HAAS CNC VERTICAL MACHINING #1

Memo

0.08

HAAS CNC vertical machine #1

1-Inspect material for defects or damage prior to machining
2-Machine as per Folio FA165 and Dwg D3049Identify as D3049-1
3-Deburr8 0 15/12/21

130

QC2- Inspect parts off machine FAI/FAIB

0.00

130

QC

Memo

0.00

Quality Control

8 0 15/12/21

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

Work Order ID 139972

Wednesday, December 16, 2015 8:35:55 AM

139972

Page 2

Item ID: D3049-1 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Bearpaw
 Start Date: 12/16/2015 Start Qty: 6.00 ***6*** Cust Item ID:
 Required Date: 12/18/2015 Req'd Qty: 6.00 ***6*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC8- Inspect parts - second check	0.00							
140									DAS
QC	Memo	0.00				8	0		14
Quality Control									9-89
									15/12/22
170	Identify as per dwg & Stock Location: <u>St454A</u>	0.00							
170	Packaging								
Packaging	Memo	0.00				8		DEC 2 2 2015	
Packaging									DAS
									6
									9-89
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.01						DEC 2 2 2015	
Quality Control						MCS			

SH 20151222

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Picklist Print

Wednesday, December 16, 2015 8:35:53 AM

Page 1
1

Work Order ID: 139972

139972

Parent Item: D3049-1

D3049-1

Parent Item Name: Bearpaw

Start Date: 12/16/2015

Required Date: 12/18/2015

Start Qty: 6.00

Required Qty: 6.00

Comments:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB10		Purchased	No			120	sf	344.3500	3.4	20.4			

MUHMWB10

UHMW 1" Black - 48"x120" Tivar Mfg.#52480104

**

EL 15-12-18

Location

Loc Qty

Loc Code

MAT018

344.35

m131661

1.25

m133248

38.9

m133042

304.2

40

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

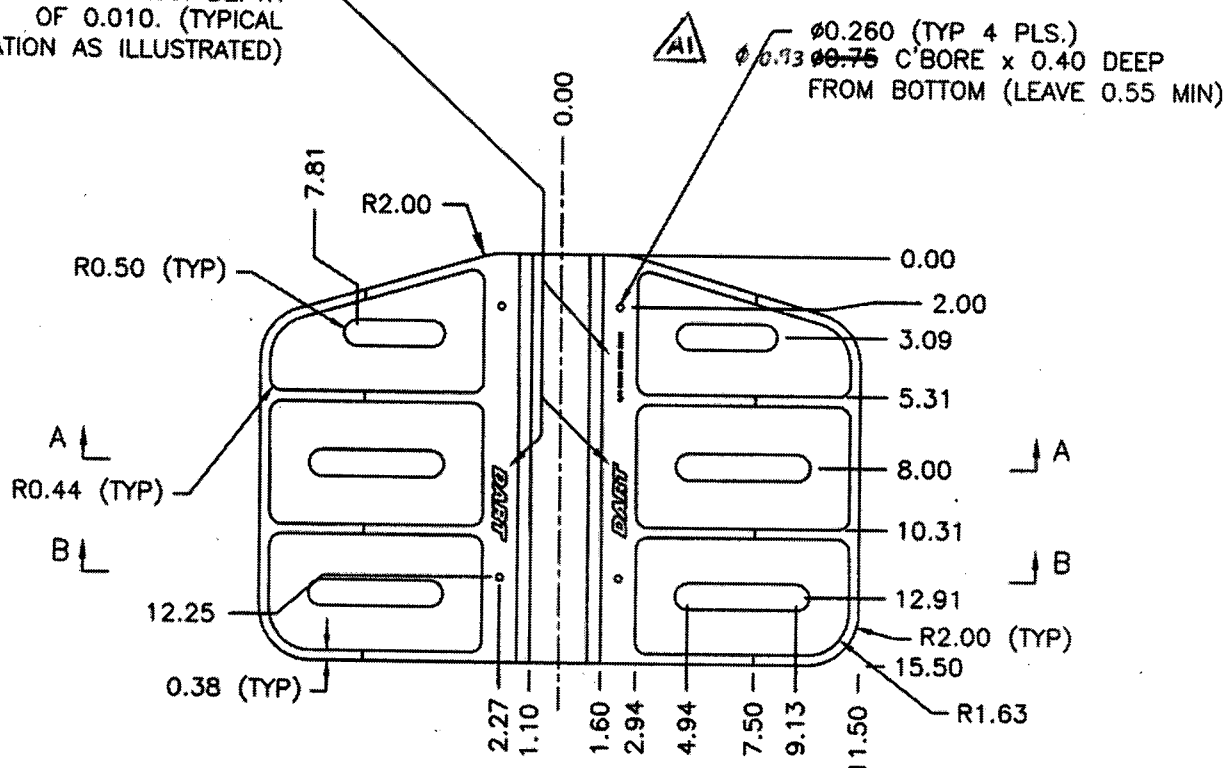


DESIGN RF	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3049	REV. A SHEET 1 OF 2
DATE 01.10.18		TITLE BEARPAW	SCALE 1:7
A	01.10.18	NEW ISSUE	
AI	# 03.01.13	0.93 WAS 0.75	

RELEASED
01.10.24

mf
#139972

ENGRAVE DART LOGO TO
MAX DEPTH OF 0.012.
ENGRAVE PART AND BATCH
NUMBERS TO MAX DEPTH
OF 0.010. (TYPICAL
LOCATION AS ILLUSTRATED)



D3049-1 BEARPAW

NOTES:

- 1) BEARPAW IS SYMMETRIC ABOUT CENTER LINE
- 2) MATERIAL: UHMW BLACK PER SPEC CONTROL DRAWING D2689, 1.00" THICK (MACHINE TO 0.950)

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

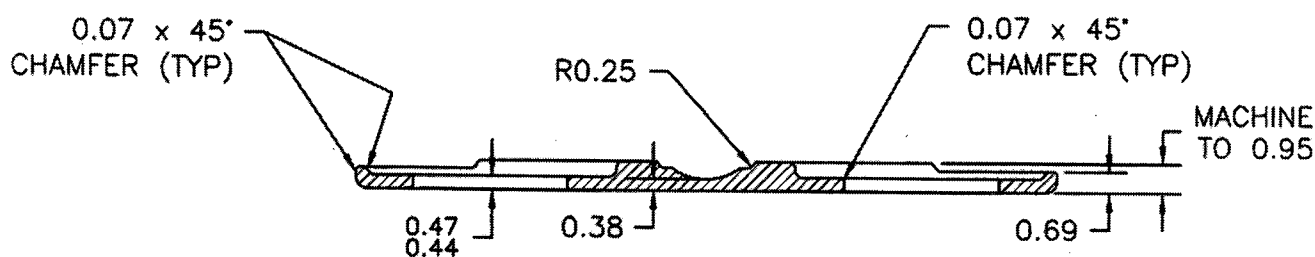
QA Closed: _____ Date: _____ Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	Operator ☐	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	Offset/Setup ☐	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	Supplier ☐	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	Training ☐	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	Use for Testing ☐	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	Poor Information ☐	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	Rushing ☐	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	Product Improvement ☐	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	Process Improvement ☐	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

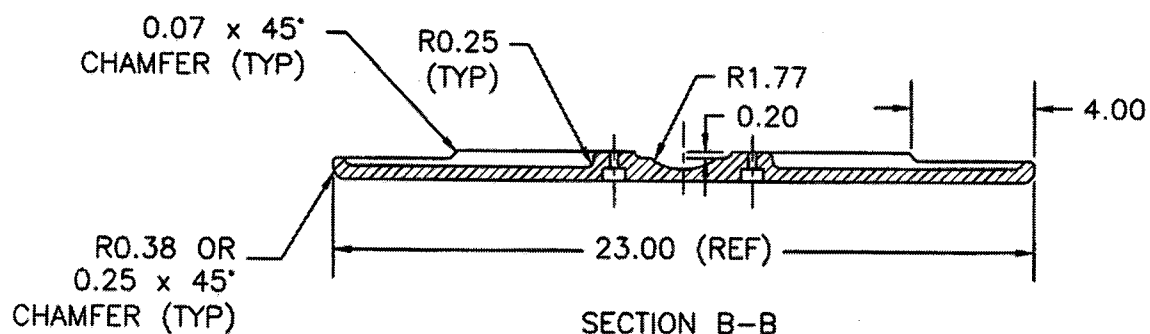


DESIGN RF	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED H	APPROVED H	DRAWING NO. D3049	REV. A SHEET 2 OF 2
DATE 01.10.18		TITLE BEARPAW	SCALE 1:6

RELEASED
01.10.24



SECTION A-A



SECTION B-B

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			

Root Cause			FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____				
Misidentified ☐	Past Due ☐					

DART AEROSPACE LTD		Work Order:	139972
Description: Bearpaw		Part Number:	D3049-1
Inspection Dwg: D3049	Rev: A1	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
A	Ø0.260	+0.005/-0.000	0.260	✓		MJP-04	vern
B	0.93	+/-0.030	0.930	✓		...	...
C	0.40	+0.030/-0.000	0.425	✓		MJP-08	Dial depth gauge
D	2.00	+/-0.030	1.995	✓		MJP-04	vern
E	10.250	+/-0.010	10.250	✓		...	...
F	4.540	+/-0.030	4.540	✓		↓	↓
G	5.88	+/-0.030	5.880	✓		↓	↓
H	0.38	+/-0.030	0.377	✓		↓	↓
I	11.50	+/-0.030	11.500	✓		MJP-07	Tape
J	0.07 x 45°	+0.030/-0.010	0.060 x 45°	✓		MJP-09	vern
K	0.44 - 0.47	+/-0.000	0.455	✓		...	...
L	R0.25	+/-0.030	0.250	✓		—	Radius gauge
M	0.38	+/-0.010	0.380	✓		MJP-04	vern
N	0.95	+0.030/-0.010	0.965	✓		...	...
O	0.69	+/-0.030	0.700	✓		↓	↓
P	0.20	+/-0.030	0.205	✓		↓	↓
Q	23.00	+/-0.030	23.00	✓		MJP-07	Tape
R	0.25 x 45°	+/-0.030	0.250 x 45°	✓		...	...

Measured by:	<i>[Signature]</i>	Audited by:	DAS 14 9-89	Prototype Approval:	N/A
Date:	15/12/21	Date:	15/12/22	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	03.09.22	New Issue P/O D135-692-011	KJ/RF	
B	08.05.06	Dimension I revised	KJ/DD <i>[Signature]</i>	<i>[Signature]</i>

DQA: _____ Date: _____



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Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					